Capital Account Liberalisation

Empirical Evidence and Policy Issues – II

The short experience with liberalisation of capital inflows documented in this paper highlights the pressures of a capital surge upon domestic monetary management. It also reveals the additional constraint of fiscal-led monetary expansion in India, which raises aggregate demand and aggravates the inflationary impact of capital inflows. These pressures complicate macroeconomic management as the only variable that can be varied in this scenario to control inflation, or adhere to a monetary target, is domestic private sector credit.

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I Introduction

In the previous article (*EPW*, April 14, 2001) I had focused upon trends in capital flows into India and their impact upon the real exchange. In the second and concluding part of the paper, I focus upon their impact upon money supply. Capital inflows can be traced to either international reserves' accumulation or a current account deficit, depending upon the exchange rate regime. If there is no intervention by the central bank, i e, the exchange rate regime is a pure float, then the net increase in capital assets via capital inflows would be associated with a similar increase in imports and therefore a widening current account deficit. Alternatively, if the exchange rate regime is fixed and the central bank intervenes to counter appreciation pressures, then capital inflows would be visible in increases in foreign exchange reserves.

Figures 1 and 2 plot foreign exchange reserves and the current account deficit (per cent GDP) for India over 1970-99. The current account deficit is seen to be narrowing after touching 3.2 per cent in 1991, the year of crisis. The steep increase in foreign exchange reserves (Figure 1) is concurrent with this decline, suggesting absorption of foreign currency inflows by the central bank.[1] In 1993, the first year of the capital surge, almost the entire net capital inflows were absorbed as foreign exchange reserves. In 1994, almost one-third of net capital inflows were utilised so; from 1996 onwards, the Reserve Bank has typically absorbed 50 per cent of net capital inflows into international reserves. The stock of international reserves in 1999-2000 (US $ 38 bn), represents an increase of nearly 552 per cent over the 1991 level. Between 1991 and 1998, the rate of growth of foreign exchange reserves in India averaged 58 per cent against a negative average of 16.8 per cent for 1985-90.[2] The heavy build-up of reserves in the aftermath of capital inflows into India mirrors the reserve accumulation patterns of countries in the Asian and Latin American regions, all of who augmented their foreign exchange reserves during the period of heavy capital inflows. In fact, Figure 1 mimics the trend in international reserves observed for a group of Asian and Latin American countries in Figures 3 and 4.

I Impact on Monetary Conditions and Sterilisation

Capital inflows impact upon domestic money supply through accumulation of net foreign currency assets with the central bank. Whether the monetary base is altered or not depends upon whether the central bank intervenes to maintain a fixed exchange rate or allows it to float freely with no intervention. If there is intervention, then an accumulation of international reserves represents an increase in the net foreign exchange assets of the central bank and directly affects the monetary base. What has been the impact of capital inflows upon domestic money supply in India and how has monetary policy responded to these inflows?

Though India has had a market-determined exchange rate since 1993, the flexibility permitted by the monetary authority has been limited. The size and scale of intervention by the central bank have increased significantly since 1993 [Kohli 2000] and the foreign exchange reserves' build-up has been substantial. Tables 1 and 2, which present a profile of monetary and fiscal indicators from 1985, offer a perspective via the transmission channel of net capital inflows, changes in net foreign currency assets, the monetary base and the broader monetary aggregates.

Some stylised facts can be established about changes in the movements of monetary aggregates after liberalisation. First, increases in net foreign exchange assets of the central bank account for most of the increase in the monetary base (reserve money) in the 1990s. As a percentage share of M3, the monetary aggregate targeted by the central bank, net foreign exchange assets have grown from an average of 3.7 per cent in the 1980s to 12.1 per cent in 1990s.[3] Second, while fiscal policy-induced increases in money supply have declined somewhat in the post-liberalisation period, it still remains an important exogenous source of monetary expansion. Third, private sector credit appears to be the only policy variable that is manipulated by the central bank via interest rate and reserve requirement changes to adhere to monetary targets.

During the capital surge episode in 1993-95, for example, the central bank's monetary target (M3 growth rate of 15-16 per cent) was overshot and the monetary base expanded both in nominal and real terms (Cols 2 and 4, Table 1). As a result of rapid growth of both nominal and real money supply, and the pass-through between the exchange rate and domestic prices, the rate of inflation rose to 10.8 per cent. Prima facie, monetary policy appears to have responded to counter the impact of capital inflows, though monetary variable are partly influenced by money demand. For instance, interest rate movements (Cols 5 and 6, Table 1), which reflect both monetary as well as fiscal changes, provide evidence of monetary

Figure 1: Foreign Exchange Reserves

(Excluding SDRs and gold)

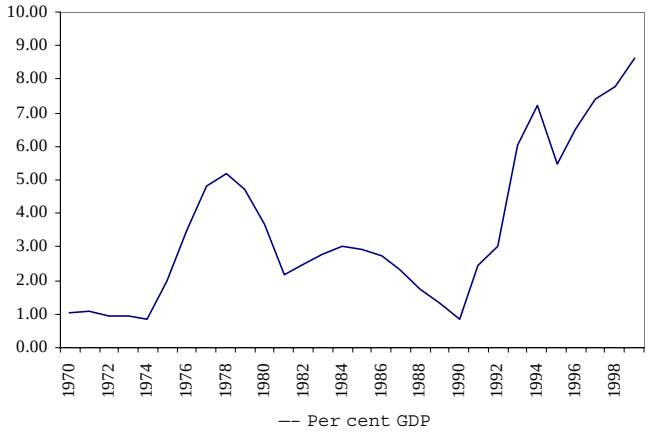


Figure 2: Current Account Balance

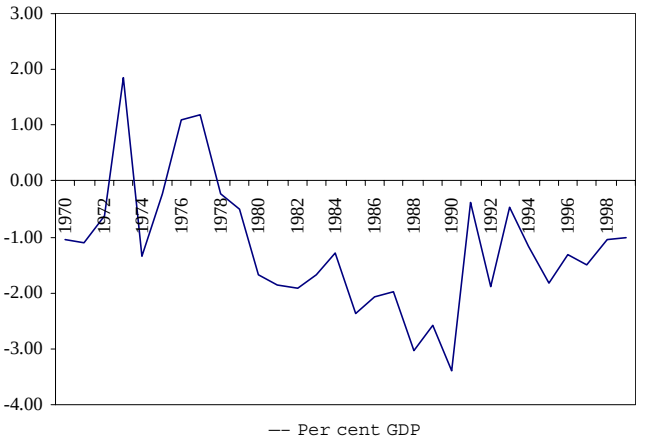


Figure 3: Official Reserves – East Asia (Indonesia, Korea, Malaysia, Philippines, Thailand)

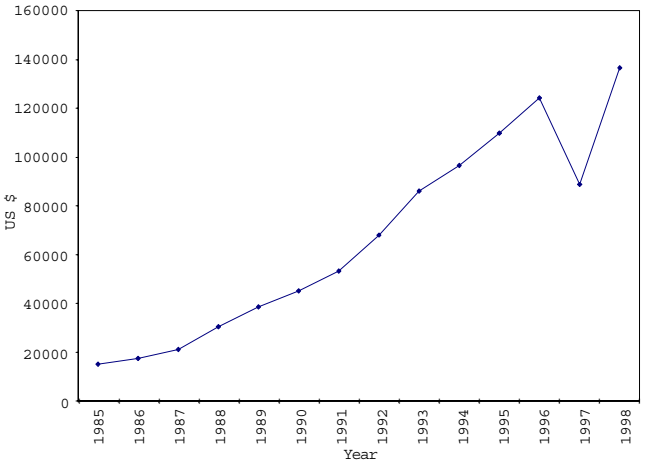
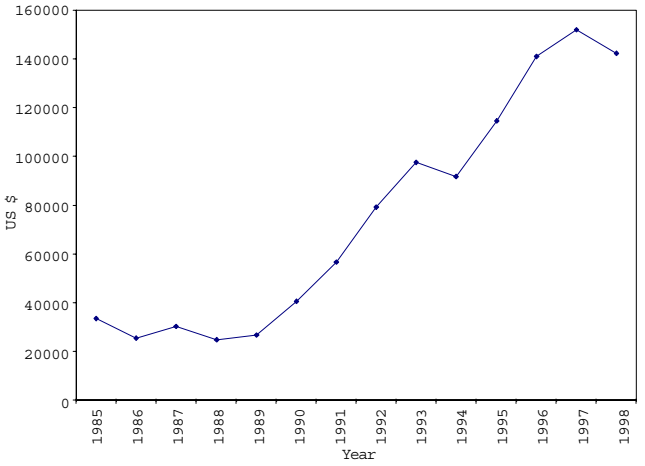


Figure 4: Official Reserves – Latin America (Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela)



tightening. Nominal interest rates rose with inflation, while the real interest rate rose in 1993-94 and fell in 1994-95. Nominal interest rates appear to have been raised to prevent the real rate of interest rate from declining.

Another perspective on monetary policy response is offered by noting movements in the monetary base in Table 2. Offsetting squeezes on private domestic credit closely correspond to accretions in net foreign currency assets. Private sector absorption thus adjusted during the capital inflow period of 1993 and 1994. In fact, commercial bank lending to the private sector was almost constant at 23.8-23.3 per cent of GDP between 1993 and 1997. Between 1993 and 1995, reserve requirements (Col 8, Table 1) were steadily raised, possibly to limit the impact of money supply via the banking system. Table 1 (Cols 1-4) shows a sharp contraction in nominal and real base money growth during 1995-96 and 1996-97, which brought about the fall

Table 1: Money Growth and Interest Rates

	Nominal Money Growth (M3)	Real M3 Growth	Nominal Monetary Base Growth	Real Monetary Base Growth	Nominal Interest Rates (Per Cent Per Annum)	Real Interest Rates[a] (Per Cent Per Annum)	Cash Reserve Ratio	Consolidated Government Deficit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1985-88	17.1	8.6	18.2	10.0	–	–	9, 9.5, 10, 10.5, 11	–
1989-91[b]	17.9	5.6	13.2	4.5	-	-	15.0	–
1992-93	14.8	4.3	11.3	1.2	17	6.2	15.0	7.19
1993-94	18.4	9.3	25.2	15.5	14	7.8	14.5, 14,	8.61
1994-95	22.3	10.4	22.1	10.1	15	5.1	14.5, 14.75, 15	7.27
1995-96	13.5	5.5	14.9	6.7	16.5	6.9	14.5, 14	6.92
1996-97	16.1	9.2	2.8	-3.3	14.8	6.0	13.5, 13, 12, 11.5, 11, 10.5, 10	6.83
1997-98	18.0	12.6	13.2	8.0	14	6.9	9.75, 9.5, 10, 10.5, 10.25	6.42
1998-99	18.3	10.7	14.6	7.2	12.5	3.6	10, 11, 10.5	8.32
1999-00	14.9	11.7	8.1	5.0	11.8	7.2	10, 9.5, 9, 8.5	7.63

Source: Cols 2-4, *Handbook of Statistics on the Indian Economy*, RBI, 1999; Col 5, *Indian Public Finance Statistics*, MoF, DEA, Economics Division, GoI.

a = nominal interest rates minus CPI inflation rates; b = averages.

in the rate of broad money growth. Finally, government credit, which had declined between 1991-93, and has traditionally been a major source of monetary expansion, also contributed to the monetary base as the fiscal deficit rose sharply in 1993-94.

Inferences based upon mere movements of the monetary variables however, are in danger of amounting to conjecture, as these are also driven by domestic conditions. For instance, note that the CRR falls in the second episode of capital surge in 1996; so do nominal interest rates, suggesting domestic policy objectives guided monetary policy response. The relationship between capital inflows and money supply, therefore, needs to be investigated more carefully. Recent econometric evidence from other countries has revealed the impact of capital flows upon monetary growth. For instance, Kamin and Wood (1998) uncover a significant independent effect of capital flows upon domestic money demand for Mexico and the Pacific Basin group of countries. Both reserve changes and net capital inflows tended to lower interest rates and raise M2, particularly in Mexico.

The interaction between capital flows and domestic money supply however, needs to be formally investigated in depth as a monetary expansion implies inflation and if the central bank's monetary growth targets are disrupted, it may be desirable to insulate the impact of capital flows upon money supply. This is typically done through sterilisation, which is simply the exchange of domestic assets for foreign assets. Typical sterilisation tools in developing countries are open reserve requirements and to a lesser extent, open market operations.[4] The former have been a common monetary management tool in southeast Asia, as also in some parts of Latin America (Chile, Mexico), to insulate domestic money supply from the expansionary effects of capital inflows.[5]

In India, the monetary impact of reserves' accumulation is neutralised primarily through reserve requirement changes on commercial banks' liabilities. India still relies on direct monetary control instead of indirect monetary management due to structural problems like interest rate rigidities, and less developed short-term money market, which limits optimal utilisation of open market operations. Open market operations are increasingly being used since 1991, though they are limited by the ability of bond and equity markets to absorb government securities. As percentage to M3, open market operations were only 0.28 per cent in 1994, increasing to 2.2 per cent by 1999. Open market operations appear to be used more to neutralise foreign exchange market interventions than as a monetary policy instrument.

While it is difficult to collect evidence on the magnitude of sterilisation, it has been conceded elsewhere that a complete offset could not be achieved [Acharya 1999]. During the 1993-95 capital surge episode in India, the cash reserve ratio was raised in three stages from 14 to 15 per cent in 1994-95 (Col 8, Table 1) to offset the effects of capital inflows upon money supply growth. Evidence gleaned from existing statistics sheds some light on the sterilisation activities of the central bank. For example, holdings of private securities by the commercial banks actually declined during this period, whereas investment by banks in government securities rose. The latter continues to show a rising trend after 1992. As percentage to GDP, investment in government securities have risen from 10.1 per cent in 1991 to 11.3 per cent in 1994, dropping to 10.8 per cent in 1995 and then again rising to 11.2 per cent (1996) and 12.6 per cent in 1998. Finally, a simple domestic credit reaction fitted on to monthly data [see Kohli 2001] from 1993:03-2000:05 yields an offset coefficient of –1.09, indicating complete sterilisation. Several variants of these specifications suggest the offset coefficient to lie between 0.84-1.09, indicating a high degree or complete sterilisation. The offset (sterilisation) coefficient shows that the RBI used domestic credit policy to attain internal policy objectives while engaging in sterilised intervention to influence/maintain the exchange rate. The use of sterilisation policies has several controversial implications, which are discussed in the concluding section of this paper.

I Conclusion

The short experience with liberalisation of capital inflows documented in this paper highlights the pressures of a capital surge upon domestic monetary management. It also reveals the additional constraint of fiscal-led monetary expansion in India, which raises aggregate demand and aggravates the inflationary impact of capital inflows. These pressures complicate macroeconomic management as the only variable that can be varied in this scenario to control inflation, or adhere to a monetary target, is domestic private sector credit. A popularly suggested macroeconomic policy response during a capital surge to counter their inflationary impact and lower aggregate demand is to exercise fiscal restraint. This option, however, has rarely been exercised or observed [Edwards 2000], the reason being that fiscal policy is usually set according to medium- and long-term projections and it is difficult to use it effectively for immediate effects. In India's case, however, there is still a strong argument for fiscal restraint as it incapacitates monetary policy. If monetary management is to be geared towards price stability with an open capital account, it is important that government credit should be curtailed. Private sector credit variations can then be released from the burden of adjustment to keep pace with real GDP growth.

A final issue is the use of sterilisation to limit the impact of foreign currency inflows upon domestic money supply. Many academics have noted the pitfalls associated with sterilisation policies [see Spiegel, Calvo 1991, amongst others] and

Table 2: Movements in the Monetary Base (Reserve Money)

(Percentage to change in reserve money)

	ΔRBICG	ΔRBICC	ΔNFA	ΔGCL	ΔNMLL	ΔRM
1984/85-89/90*	105.5	13.6	7.6	2.0	28.7	100
1991-92	44.0	133.3	92.5	0.7	3.3	100
1993-94	3.0	-14.7	103.2	0.6	-7.9	100
1994-95	7.1	26.4	76.1	1.3	10.8	100
1995-96	79.3	34.9	-2.5	0.0	11.7	100
1996-97	49.6	-272.5	363.9	9.6	50.5	100
1997-98	41.9	7.8	80.3	0.7	30.7	100
1998-99	42.8	25.1	54.3	1.8	24.0	100
1999-00	-20.4	31.3	133.2	2.0	46.1	100

*Pre-90 figures from Joshi and Little (1994: 253). Author's calculations for the rest of the table.

RBICG: RBI credit to government

RBICC: RBI credit to commercial sector, including commercial banks

NFA: RBI's net foreign exchange assets

GCL: Government currency liabilities to the public

NMLL: Net non-monetary liabilities of the RBI

RM: Reserve money

RM=RBICG+RBICC+NFA+GCL-NMLL

it is a controversial issue. One reservation about sterilisation is its effects upon interest rates. Since sterilisation involves an exchange of foreign currency assets for domestic currency assets, the interest rate on the latter has to be kept high to limit central bank losses arising out of interest differentials. This however, would serve to attract further capital inflows, which could be potentially destabilising in some situations. Open market operations is another channel through which sterilisation may exert pressure on short-term interest rates. On the other hand, a non-sterilised intervention increases the monetary base, resulting in lower interest rates.

Two, sterilisation leads to an increase in public debt, and these costs, termed as quasi-fiscal costs in the literature, due to a favourable interest differential for domestic bonds, can be substantial. Calvo, Leiderman and Reinhart (1993) have estimated quasi-fiscal costs for Colombia at 0.5 per cent of GDP while Khan and Reinhart estimate them between 0.25-0.5 per cent of GDP for Latin American countries.[6] No such estimates exist for India at present and there is a need for empirical studies on this issue. The substantial rise in commercial banks' holdings of government securities by the banking system in the 1990s, mentioned earlier in the paper, suggests that the burden of quasi-fiscal costs could be quite high.

Three, some researchers [for example, Folkerts-Landau et al 1994] have noted that sterilisation through reserve requirement changes will not be effective in addressing capital inflows intermediated outside the banking system, i e, bond and equity markets. This is a relevant issue for India for two reasons. First is the heavy dependence upon reserve requirements as a policy tool for monetary management. To counter the impact of a capital surge upon the stock market, effective open market operations and a vibrant, active market for both government and private securities is a necessary prerequisite. The second consideration in this regard is that though a substantial amount of funds in India are still intermediated through the banking sector, its share in the total financial assets of the economy is steadily falling. Between 1990 and 1999, the banking sector's share has fallen from 66.8 to 64.2 per cent, being substituted by the rise of non-bank and investment institutions.[7] For instance, Spiegel (1995: 33) has noted that the more developed the non-financial sector, the less effective will be sterilisation policy through standard open market operations or through reserve requirement changes. With the structure of financial sector still evolving, and the dilution of the banking sector, the future effectiveness of reserve requirements is questionable.

Other costs of sterilisation through reserve requirement changes are the low rates of return on they bear, which distorts the share of intermediation by the banking sector. Another source of loss to the central bank due to sterilisation is the interest differential between the interest rate on purchase of foreign exchange securities and the interest rate paid on external debt servicing [Spiegel 1995:18]. Clearly, a major area that deserves to be explored in depth is the costs associated with sterilisation, which would no doubt be a valuable input to the extent of use that sterilisation policies can be put to. EPW

Notes

[The views expressed are the author's own and not of the institution to which she belongs.]

1 The intervention activities of the RBI have been extensively documented in Kohli (2000a, b).

2 One may also note at this point the conscious efforts made by the authorities to boost foreign exchange reserves through mobilisation of funds from non-resident Indians, viz, the Resurgent India Bonds (1998) and the Indian Millennium Deposit Bonds (2000). These were targeted exclusively at NRIs and overseas corporate bodies predominantly owned by NRIs.

3 This is even more significant when compared to a 12 per cent average share in the increase in the monetary base in the 1980s (*Report on Currency and Finance, 1998-99*, RBI, Mumbai).

4 In most developing countries, the securities markets are thin, with the result that central banks typically rely heavily on reserve requirement changes.

5 Occasionally, other sterilisation instruments like open market operations, swap operations with commercial banks, cuts in central bank credit and rediscounts, increases in the rediscount rate, conversion of commercial bank debt of public institutions and transfer of assets of pension/provident funds, etc, have been used to bring about monetary tightening. For a detailed account of sterilisation methods and experience in Asia, see Spiegel (1995).

6 Kletzer and Spiegel (2000) have extended the analysis further to incorporate the role quasi-fiscal costs might play in monetary policy for a group of APEC countries. Though they find these to be small in their influence upon central bank behaviour, they do find they might play a role in abandonment of a sterilisation programme in the midst of a capital surge.

7 The fall in the banking sector's assets in the total financial system might have implications for real exchange rate appreciation too. Evidence from south-east Asia indicates that Korea, which had the largest non-bank financial sector, experienced the greatest degree of real exchange rate appreciation, whereas countries with large shares of assets in the banking sector, had no, or moderate real exchange rate appreciation.

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'Godmother': Contesting Communal Politics in Drought Land

Errata

In the article '"Godmother": Contesting Communal Politics in Drought Land' by Svati Joshi (*EPW*, December 2, 2000) the following editing errors require correction:

(1) Page 4304, col 3, lines 24-25 from top, delete "(see … 1982)".

(2) Page 4305, col 2, lines 26-25 from bottom should read "Veeram, and the entire Mer community behind him, support …"

(3) Page 4306, col 2, lines 15-17, from top should read "His misconception and misuse of her power upsets Rambhi."

(4) Page 4306, col 3, the first sentence of the last para should read "'Godmother' begins and ends with a moving invocation to the soil , a material, social and emotional tearing away from which unleashes changes of vast historical significance for those who live by the land."

(5) Page 4306, col 3, the first two sentences of the endnote should read: "*The Mers of Saurashtra* by Harshad Trivedi, Baroda, 1982. Information on the Mers and the region is drawn from this book."

The errors are deeply regretted.

–Ed.